

Appl. No. 10/678,150
Amdt. dated March 31, 2005
Reply to Office Action of January 26, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A composite comprising an interlayer disposed between a first interpenetrating layer and a second interpenetrating layer, the first interpenetrating layer incompatible in respect of bonding with the second interpenetrating layer, the first interpenetrating layer forming a mechanical interlock with the interlayer and the second interpenetrating layer forming a mechanical interlock with the interlayer, the interlayer consisting essentially of a porous material having a texture that promotes interlock strength between the interlayer and the interpenetrating layers, the first interpenetrating layer partially interpenetrating the interlayer, and the second interpenetrating layer partially interpenetrating the interlayer.

Claim 2 (original): The composite according to claim 1, wherein the porous material is a fibrous mat, scrim or fabric, a pitted or perforated metal strip or block, or a porous clay.

Claim 3 (original): The composite according to claim 1, wherein the porous material is a fibrous mat, scrim, fabric, sheet or strip.

Claim 4 (original): The composite according to claim 3, wherein the fibrous mat, scrim, fabric, sheet or strip comprises glass fibers, metallic fibers, metallic oxide fibers, ceramic fibers, cellulose fibers, asbestos fibers, plastic fibers or hybrids thereof.

Claim 5 (original): The composite according to claim 3, wherein the fibrous mat, scrim or fabric comprises glass fibers or polyester fibers.

Claim 6 (cancelled)

Claim 7 (cancelled)

Claim 8 (cancelled)

Claim 9 (original): The composite according to claim 1, wherein one or more substrates are bonded to one or more of the interpenetrating layers.

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Claim 10 (original): The composite according to claim 9, wherein the one or more substrates comprise a polymer, a metal or metal alloy, a glass, a ceramic, a composite thereof, or a combination thereof.

Claim 11 (original): The composite according to claim 1, comprising more than one interlayer.

Claims 12-20 (cancelled)

Claim 21 (currently amended) A composite comprising an interlayer disposed between a first interpenetrating layer and a second interpenetrating layer, the first interpenetrating layer incompatible in respect of bonding with the second interpenetrating layer, the first interpenetrating layer forming a mechanical interlock with the interlayer and the second interpenetrating layer forming a mechanical interlock with the interlayer.

the interlayer consisting essentially of a porous fibrous mat, scrim, fabric, sheet or strip comprising glass fibers and/or polyester fibers having a texture that promotes interlock strength between the interlayer and the interpenetrating layers,

the first interpenetrating layer partially interpenetrating the interlayer and comprising a polypropylene, a thermoplastic polypropylene/glass fiber composite, a thermoset polyester, a thermoset polyester/glass fiber composite, a thermoset epoxy, a thermoset epoxy polymer/glass fiber composite, a maleic anhydride graft polypropylene, a polyethylene or an ethylene-propylene rubber thermoplastic elastomer, or an ethyl 2-cyanoacrylate adhesive, and

the second interpenetrating layer partially interpenetrating the interlayer and comprising a polypropylene, a thermoplastic polypropylene/glass fiber composite, a thermoset polyester, a thermoset polyester/glass fiber composite, a thermoset epoxy, a thermoset epoxy polymer/glass fiber composite, a polyurethane adhesive, or an acrylic adhesive, a maleic anhydride graft polypropylene, an ethylene-propylene rubber thermoplastic elastomer or an ethyl 2-cyanoacrylate adhesive.

Claim 22 (original): The composite according to claim 21, further comprising a substrate adhered to one or more of the interpenetrating layers.

Claim 23 (new): The composite according to claim 1, wherein the first interpenetrating layer comprises a polymer and the second interpenetrating layer comprises a metal or metal alloy, a glass, a ceramic, a composite thereof, or a combination thereof.

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Claim 24 (new): The composite of claim 23, wherein the polymer comprises a thermoplastic, a thermoplastic composite, a thermoset or a thermoset composite.

Claim 25 (new): The composite according to claim 1, wherein the first interpenetrating layer comprises a thermoplastic or a thermoplastic composite and the second interpenetrating layer comprises a thermoset or a thermoset composite.

Claim 26 (new): The composite according to claim 1, wherein the first interpenetrating layer comprises a polyethylene, a polypropylene, a maleic anhydride graft polypropylene, a thermoplastic polypropylene/glass fiber composite or an ethylene-propylene rubber thermoplastic elastomer and the second interpenetrating layer comprises a thermoset polyester, a thermoset polyester/glass fiber composite, a thermoset epoxy, a thermoset epoxy polymer/glass fiber composite, a polyurethane adhesive or an acrylic adhesive.